

菊科莴苣亚族黑苞毛鳞菊及其泛喜马拉雅地区相近种的分类杂记

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摘要: 基于已有标本的详细研究和文献的追踪, 证实黑苞毛鳞菊(或黑苞乳苣)在中国没有分布, 国内相关文献上的该物种实际应为后期发表的青海乳苣, 现已处理为青海毛鳞菊, 并首次报道不丹有分布。青海毛鳞菊的瘦果形态和花药管长度明显异于黑苞毛鳞菊。作为标本稀有的云南特有种, 单头乳苣近期被暂时处理为黑苞毛鳞菊的异名, 但本研究支持其作为一个独立种且与大花毛鳞菊复合群关系较近。对于巴基斯坦北部和克什米尔地区近期发表的与黑苞毛鳞菊形态相近的两个新种, *Cicerbita alii* 被证实为独立种且新组合到毛鳞菊属, 而 *C. astorensis* 被处理为黑苞毛鳞菊的异名。

关键词: 乳苣属; 毛鳞菊属; 岩参属; 莴苣属; 分类; 莴苣亚族; 菊科

中图分类号: Q 949

文献标志码: A

文章编号: 2095-0845(2015)04-401-06

Notes on *Melanoseris lessertiana* (Lactucinae, Asteraceae) and Morphologically Allied Species in the Pan-Himalayan Region

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Abstract: Based on detailed study of available specimens and perusal of literature, it is shown that *Melanoseris lessertiana* or *Mulgedium lessertianum* is not present in China and corresponding reports in the floristic literature of China actually refer to a species originally described as *Mulgedium qinghaicum*, and correctly placed as *Melanoseris qinghaica*, a species here reported for the first time also for Bhutan. *M. qinghaica* can be clearly distinguished from *M. lessertiana* by achene shape and anther tube length. The rare and little known Yunnan endemic, originally described as *Lactuca monocephala* and tentatively considered as conspecific with *M. lessertiana* recently, is confirmed as an independent species related to the *M. atropurpurea* complex. Of two recently described species from N Pakistan and Kashmir morphologically allied to *M. lessertiana*, *Cicerbita alii* is confirmed as a separate species and transferred to *Melanoseris*, while *C. astorensis* is considered as conspecific with *M. lessertiana*.

Key words: *Mulgedium*; *Melanoseris*; *Cicerbita*; *Lactuca*; taxonomy; Lactucinae; Asteraceae

Mulgedium lessertianum was first described by de Candolle (1838), and was subsequently transferred by Decaisne (Jacquemont, 1843) to the new genus *Melanoseris* Decne., but later to *Lactuca* L. (Clarke, 1876) and *Cicerbita* Wallr. (Mamgain and Rao,

1989). Its distribution area has been considered to range from N Pakistan and Kashmir (Bano and Qaiser, 2010) across the Himalayas (Mamgain and Rao, 1989, 1995; Hara *et al.*, 1982; Grierson and Long, 2001) to China (Tang, 1983; Shih, 1988,

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Received date: 2014-10-20, Accepted date: 2015-01-16

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1997). In the Flora of China (Shih *et al.*, 2011), the genus *Melanoseris* was revived, and the species again treated as *M. lessertiana*. A molecular phylogenetic analyses by Wang *et al.* (2013) confirmed that *Melanoseris* represents a separate lineage within the subtribe Lactucinae and revealed its sister group relationship to *Lactuca*. From other species in the genus with capitula of similar flower number (in the range of 15–25), *M. lessertiana* in the wide sense previously applied differs by its low stature (usually up to 30 cm), the usual absence (or else already basal branching) of a dominant main stem and presence of several weak secondary flowering stems, and a pappus without an outer row of minute hairs.

Since the incision of the leaves of *M. lessertiana* shows strong variability, the species has been subdivided into three subspecies (Stewart, 1972; Dhar and Kachroo, 1983; Mamgain and Rao, 1989, 1995) or varieties (Bano and Qaiser, 2010). Besides, several species morphologically similar to *M. lessertiana* have been described. *Mulgedium qinghaicum* S. W. Liu & T. N. Ho (Liu and Ho, 2001) from Qinghai, China, of which the holotype and only specimen (S. W. Liu 3536b, HNWP) is lost, and *Lactuca monocephala* C. C. Chang (Chang, 1934) [= *Mulgedium monocephalum* (C. C. Chang) C. Shih (Shih, 1988)], then only known from the type collections from Yunnan in 1913, were tentatively treated as conspecific with *Melanoseris lessertiana* by Shih and Kilian (Shih *et al.*, 2011). In addition, recently three new species morphologically allied to *M. lessertiana* were described from N Pakistan and Kashmir (Bano and Qaiser, 2010), i. e. *Cicerbita alii*, *C. astorensis* and *C. gilgitensis*.

1 Material and methods

The investigation is based on herbarium material from the herbaria of B, KUN, MB and PE, and high resolution digital specimen images of further type material available through JSTOR Global Plants (2014), or such provided by herbaria. We morphologically investigated the three species reported from

China, *Mulgedium lessertianum*, *Lactuca monocephala* and *M. qinghaicum* as well as *Cicerbita alii* and *C. astorensis* from Pakistan. Micromorphological features of herbarium specimens were examined under a WILD M5 optical reflected-light microscope. Features were documented with an Olympus DP72 digital camera mounted on an Olympus SZX16 stereo zoom optical reflected-light microscope equipped with the Olympus analySIS docu software.

2 Results and discussion

Morphological analyses of the material revealed that in addition to achene shape, anther tube length is a valuable character to distinguish macromorphologically else similar taxa.

***Melanoseris lessertiana*:** The type collection of *M. lessertianum* DC. from Kumaon [a region of E Uttarakhand], India (Wallich Cat no. 3254/364 with ripe achenes e. g. in the holotype at G-DC (G 00469963) and the isotype at K (K 000250933)) clearly shows that the achenes of this species have a stout beak of the kind as illustrated for *M. lyrata* Decne. (Jacquemont, 1843), an early synonym of *M. lessertiana*. Our analysis of specimens from the Himalayas revealed that this shape is characteristic for *M. lessertiana* in the sense of the type (see also Fig. 1A1–2) and is correlated with an anther tube of 3.7–4.7 mm length (Table 1). The involucre has some pubescence (Fig. 1A3) of varying degree. We cannot confirm the statement by Bano and Qaiser (2010) of the presence of an outer row of minute pappus hairs in this species.

***Mulgedium qinghaicum*:** Although the type material is lost, the authors provided an illustration, which is quite instructive, characterizing the species by a long-beaked achene, a pappus without an outer row of minute hairs and flowers with an anther tube (excluding appendages) of approximately only 2 mm length. Detailed study on the specimens and perusal of literature (Tang, 1983; Shih, 1997; Liu and Ho, 2001) revealed that all material known from China and referred to *Melanoseris lessertiana* (or

Mulgedium lessertianum) well matches *Mulgedium qinghaicum* in the combination of features characterizing this species. *M. qinghaicum* differs from *M. lessertiana* mainly in achene shape and anther tube length, while it agrees in capitulum size and pubescence of the involucre (Fig. 1B3). The achenes of *M. qinghaicum* have a thin beak which is distinctly longer than the body (Fig. 1B1–2), while *M. lessertiana* has a much shorter and stouter beak (Fig. 1A1

–2). The anther tube of *M. qinghaicum* is only 2.1–2.4 mm long, compared with 3.7–4.7 mm for *M. lessertiana* (Table 1). Molecular phylogenetic analyses (Wang *et al.*, 2013) confirmed the inclusion of the species in the *Melanoseris* lineage but are not conclusive with respect to its relationship, because nuclear and chloroplast phylogenies show incongruent placements within *Melanoseris*. The species is here reported for the first time also for Bhutan, based

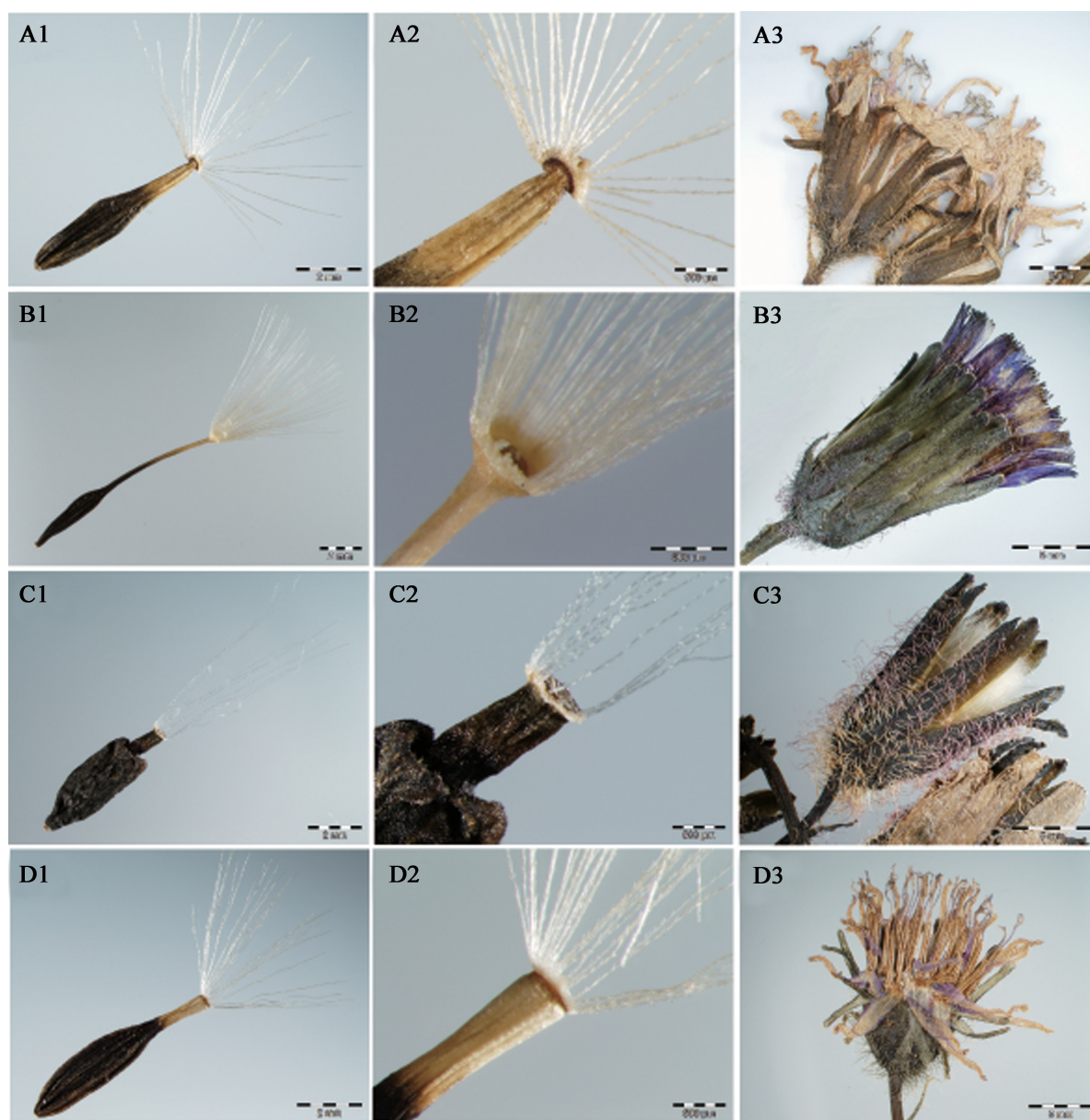


Fig. 1 Achenes, pappus and capitula of *Melanoseris lessertiana* and three morphologically allied species

A; *Melanoseris lessertiana* (= *Mulgedium lessertianum*); B; *Mulgedium qinghaicum*; C; *Cicerbita alii*; D; *Cicerbita astorensis*. * 1; achene shape (bars at 2 mm); 2; details of pappus base (bars at 500 μ m); 3; capitula (bars at 5 mm). A from G. Watt 2172 (B); B from G. & S. Miede 00-346-01 (MB); C from O. Polunin 56/567 (B); D from O. Polunin 56/717 (B)

on the collection by G. & S. Miehe 00-346-01 at Marburg (MB): “Bhutan, Floristic Province N 19 (Upper Pho Chu), District Gasa, Gecha La W side, above Woche, 28°1'N, 90°1'E, 4 200–4 300 m, *Rhododendron anthropogon* dwarf-scrub pastures on SW-facing slope, 1 Sep 2000”).

Lactuca monocephala: While the protologue and the holotype in Kew give no collecting data other than just “Yunnan”, the label of the isotypes at Edinburgh (E) and Beijing (PE) are much more informative, reading “Plant of 6–9 inches, flowers pale blue, on cliffs and humus-covered boulders on the mountains in the N. E. of the Yangtze bend, Lat. 27°50' N, Alt. 10.-11.000 ft., Sept. 1913”. The type collection bears no ripe achenes and the anther tube has a similar length as *M. lessertiana* (see Table 1). The species was rediscovered for the first time by Niu Yang in NW Yunnan in 2010 and the molecular data (generated by Jiangwen Zhang, Kunming Institute of Botany) confirm its position in *Melanoseris* indicating a relationship with the *M. atropurpurea* complex (unpublished data). The specimen, collected in flower, subsequently got lost. Photographs of the plant are shown in the Cichorieae Portal (ICN Portal 2014 under *M. monocephala*).

Cicerbita alii: The isotype at Berlin reveals that

the unusually thick, short stem and its achenes with the distinctively shouldered body below the beak (Fig. 1C1) and a pappus, in contrast to the statement by Bano and Qaiser (2010), without an outer row of minute hairs (Fig. 1C2) are correlated with the possession of the longest anther tube (of *c.* 6 mm) so far known in *Melanoseris* (Table 1). This feature combination leaves no doubt at its independent species status. The involucre, at least of the type collection, shows a particularly dense and long indumentum (Fig. 1C3). Morphologically, the species well matches the *Melanoseris* clade and should be treated as a member of that genus. The species seems to have a restricted distribution in N Pakistan and Kashmir.

Cicerbita astorensis: The paratype material at Berlin cannot reliably be distinguished from *M. lessertiana*, neither with respect to achene shape (Fig. 1 D1–2) nor to anther tube length (Table 1), nor to any other feature investigated, including the habitual difference given by its authors. We cannot confirm the statement by Bano and Qaiser (2010) of the presence of an outer row of minute pappus hairs. Therefore this species should be treated as conspecific with *M. lessertiana*.

As no specimen of *Cicerbita gilgitensis* was available, this species is not considered here.

Table 1 Comparison of the anther tube length of *Melanoseris lessertiana* and morphologically allied species

Species name	Voucher (herbarium)	Collection location	Anther tube length (excluding appendages) /mm
<i>Mulgedium lessertiana</i>	G. Watt. 2172 (B)	Chumba State, India	3.7–4.0
<i>Mulgedium lessertiana</i>	M. Nüsser 157 (B)	N Pakistan	4.0–4.3
<i>Mulgedium lessertiana</i>	J. H. Lace 1657 (B)	Chamba, India	4.5–4.7
<i>Mulgedium lessertiana</i> var. <i>lyrata</i>	O. Polunin 56/192 (B)	Khelanmarg, Kashmir	4.2–4.4
<i>Cicerbita astorensis</i>	O. Polunin 56/717 (B)	Mengandob, Kashmir	3.9–4.1
<i>Mulgedium qinghaicum</i>	G. & S. Miehe 00-346-01 (MB)	Upper Pho Chu, Bhutan	2.1–2.2
<i>Mulgedium qinghaicum</i>	G. & S. Miehe 05-047-06 (MB)	Xizang, China	2.3–2.4
<i>Mulgedium qinghaicum</i>	G. & S. Miehe 05-086-06 (MB)	Xizang, China	2.1
<i>Lactuca monocephala</i>	G. Forrest 11231 (E)	Yunnan, China	4.1–4.4
<i>Cicerbita alii</i>	O. Polunin 56/567 (B)	Kolahoi, Kashmir	5.9–6.1

Taxonomic treatment

Key to the four morphologically allied species of *Melanoseris*

- 1a. Perennial rosette herbs with subscapiform only basally leafy, unbranched flowering stems, involucre glabrous, anther tube excluding appendages 4.1–4.4 mm long *Melanoseris monocephala*
- 1b. Perennial herbs with branched and \pm leafy flowering stems, synflorescence racemiform, involucre pubescent to varying degrees
 - 2a. Achenes with a distinctively shouldered body below the black beak, anther tube excluding appendages c. 6 mm long *Melanoseris alii*
 - 2b. Achene body attenuate to weakly contracted into a pale beak, anther tube excluding appendages less than 5 mm long
 - 3a. Achenes with a stout beak, anther tube excluding appendages 3.7–4.7 mm long *Melanoseris lessertiana*
 - 3b. Achenes with a thin beak distinctively longer than the body, anther tube excluding appendages 2.1–2.4 mm long *Melanoseris qinghaica*

Melanoseris lessertiana (DC.) Decne. in Jacquemont, Voy. Inde **4**: 102. 1843; *Mulgedium lessertianum* DC., Prodr. **7**: 251. 1838; *Lactuca lessertiana* (DC.) C. B. Clarke, Compos. Ind.: 270. 1876; *Cicerbita lessertiana* (DC.) Mamgain & Rao in J. Bombay Nat. Hist. Soc. **86**: 273. 1989. –Holotype: [India] “montanis ad Kamaon et Emodum”, *Wallich s. n.*, cat. comp. [3254/]364 (G-DC [mounted on two sheets, G 00469962, G 00469963; isotypes: K 000250933, NY 00230698]).

= *Cicerbita astorensis* Bano & Qaiser in Pakistan J. Bot. **42**: 39. 2010. –Holotype: Pakistan, Astor Dist., Shaban top above Dombabho, 11.9.2006, *Ali Noor & al.* 584 (KUH).

Notes: (1) We consider the two sheets preserved in the Candolle herbarium at Genève (G-DC) as a single specimen according to Art 8.3 of the Melbourne Code (McNeill *et al.*, 2012): they are numbered (by the curators?) “1” (=G 00469962) and “2” (=G 00469963); “1” carries the original label while “2” only has the pencil number “364”; only “2” has the label with the revised determination, a paper capsule with loose fruiting heads and achenes, and carries the statement by Auguste Monnier mentioned in the protologue “Certé non Hieracium/Genus novum?”, all being indications that already Candolle considered them as a single entity. (2) For further synonyms see ICN Portal (ICN (Hand *et al.*), 2009+).

Distribution: *Melanoseris lessertiana* in the sense of its type is distributed in the Himalayas from N Paki-

stan (Baltistan, Gilgit) and Kashmir (Bano and Qaiser 2010) across NE India (Jammu-Kashmir, Himachal Pradesh, Uttarakhand, Sikkim) (Hajra *et al.*, 1995) and Nepal (Hara *et al.*, 1982), but apparently does not enter China. Its presence in Bhutan (Grierson and Springate, 2001) needs confirmation for possible confusion with *M. qinghaica*.

Melanoseris qinghaica (S. W. Liu & T. N. Ho) N. Kilian & Ze H. Wang in PLoS One **8** (12), e82692: 18. 2013; *Mulgedium qinghaicum* S. W. Liu & T. N. Ho in Acta Phytotax. Sin. **39**: 556. 2001. –Holotype: “China. Qinghai: Hualong, in poplar forests, alt. 2 600 m”, 18 Sep 1988, S. W. Liu 3536b (HNWP; lost); **lectotype (designated here)**: [icon] Acta Phytotax. Sin. **39**: 557, fig. 2. 2001.

Distribution: To our current knowledge, *M. qinghaica* is restricted in its distribution to China (Xizang, Qinghai and Yunnan) and Bhutan.

Melanoseris monocephala (C. C. Chang) Ze H. Wang in PLoS One **8** (12), e82692: 18. 2013; *Lactuca monocephala* C. C. Chang in Contr. Biol. Lab. Sci. Soc. China, Bot. Ser. **9**: 132. 1934; *Mulgedium monocephalum* (C. C. Chang) C. Shih in Acta Phytotax. Sin. **26**: 391. 1988. –Holotype: China, Yunnan, [mountains in the N. E. of the Yangtse bend, 27°50' N, 10.-11.000 ft., Sep 1913], *G. Forrest 11231* (K 000808102; isotypes: E 00394949, PE 00552631).

Note: Locality data from isotypes at E & PE.

Distribution: This rare species is probably endemic to NE Yunnan.

Melanoseris alii (Bano & Qaiser) N. Kilian & Ze H. Wang, **comb. nov.**; *Cicerbita alii* Bano & Qaiser in Pakistan J. Bot. **42**: 39. 2010. —Holotype: Pakistan, Kashmir, Kolohoi valley, 27. 8. 1956, *O. Polunin* 56/567 (BM; isotype B).

Distribution: The species is known only from N Pakistan (Gilgit) and Kashmir.

Acknowledgements: The authors are grateful to Sabine & Georg Miehe (Marburg) who provided material of their collections for our studies and to the curators of the herbaria G (Genève, Switzerland) and PE (Beijing, China) for their kind help. We also thank Julia Pfitzner (Berlin, Germany) for the photographs of Fig. 1. The first author thanks the German Academic Exchange Service (Deutscher Akademischer Austausch Dienst, DAAD) for providing a grant for a four month research stay in 2012 in Berlin.

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